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(21)Application number : 11-211481	(71)Applicant : TOYOTA CENTRAL RES & DEV LAB INC TOYOTA MOTOR CORP
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(54) POSITIVE ELECTRODE PASTE COMPOSITION FOR LITHIUM SECONDARY BATTERY, POSITIVE ELECTRODE, AND ITS MANUFACTURE

(57)Abstract:

PROBLEM TO BE SOLVED: To provide a positive electrode paste composition for lithium secondary battery excellent in the performance as required of lithium secondary battery and also suitable for mass-production, provide a positive electrode using the paste composition, and offer a method for manufacturing such positive electrodes.

SOLUTION: A positive electrode active material consisting of lithium-nickel series compound oxide having a stratified crystalline structure, a conductive substance to give conductivity to this active material, and a binder to couple them together are dispersed in a solvent, and thereto 0.1-3 pts.wt. organic acid of divalent or more is added relative to 100 pts.wt. positive electrode active material. This paste composition is applied to an electricity collector followed by drying so that an intended positive electrode for lithium secondary battery is produced.

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In this case, the layered lithium nickel composite oxide has a crystal structure of a layered rocksalt structure and that is the same as the crystal structure of a lithium cobalt composite oxide. It has better charge/discharge cycle characteristics at high temperatures than a lithium manganese composite oxide with a spinel crystal structure. The layered lithium nickel composite oxide refers to a composite oxide including a transition metal, composed mainly of lithium and nickel, and a composite oxide represented by the composition formula $\text{LiNi}_{1-x}\text{M}_x\text{O}_2$ (M is one or more of Ti, Mn, Co, Al, Mg and Ga and $0 \leq x < 1$) may be used. In using any such composite oxide as an active material, the use of fine particles is desirable, and the use of particles having a particle size of 1 to $30 \mu\text{m}$ is preferable.

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(54)【発明の名称】 リチウム二次電池用正極ペースト組成物、リチウム二次電池用正極、およびその製造方法

(57)【要約】

【課題】 リチウム二次電池としての電池性能に優れるのみならず、量産性にも適した正極ペースト組成物、およびそのペースト組成物を用いたリチウム二次電池用正極、さらにはその製造方法を提供すること。

【解決手段】 層状結晶構造をもつリチウムニッケル系複合酸化物を正極活物質とし、この正極活物質と活物質に導電性を付与する導電性物質と、両物質を結合するバインダーとを溶剤に分散し、これに2価以上の有機酸を正極活物質100重量部に対して0.1~3重量部配合している。このペースト組成物を集電体に塗布乾燥することによりリチウム二次電池用正極が得られる。